Chapter 17:
Psychotherapeutic Agents

Psychotherapeutic Agents

- Haveles (p. 223)
- Many drugs have the ability to affect mental activity
  - The dental health care worker must understand their pharmacologic effects, adverse reactions, and dental implications
- Psychiatric drugs are classified by their therapeutic use

Psychiatric Disorders

- Haveles (pp. 223-225) (Fig. 17-1)
- May be divided into organic and functional or primary and secondary types, depending on their suspected cause
  - Organic illness is congenital or caused by injury or disease
  - Functional disorders are partially of psychogenic origin without evidence (to date) of structural or biochemical abnormality

Psychiatric Disorders

- Functional disorders include
  - Psychoses
  - Affective disorder
  - Neuroses (anxiety)

Chapter 17 Outline

- Psychotherapeutic Agents
  - Psychiatric disorders
  - Antipsychotic agents
  - Antidepressant agents
  - Drugs for treatment of bipolar depression

Psychiatric Disorders

- Haveles (pp. 223-224) (Box 17-1)
- Schizophrenia, the most common type of psychosis, is an extensive disturbance of personality function with a loss of the perception of reality
  - Delusions or paranoia so severe that the illness could lead to committing serious crimes
  - Positive symptoms of psychosis include agitation, extrapyramidal symptoms, and auditory hallucinations
  - Negative effects include flat affect and apathy

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Affective Disorder

- Haveles (p. 224)
  - Includes endogenous and exogenous unipolar depression and bipolar depression
  - Endogenous (involutional) depression seems to be unrelated to external events
  - Exogenous (reactive) depression appears to be related to specific external events

Neuroses

- Haveles (p. 224)
  - Less severe than psychoses
    - Includes anxiety, panic disorder, phobias, and obsessive-compulsive disorder
  - Psychophysologic (somatic) disorders have an emotional origin but manifest by physiologic symptoms
  - Personality disorders include sexual deviation, alcoholism, and drug dependence

Psychiatric Disorders

- Haveles (p. 224)
  - Communication: comments or movement may be perceived as threatening
  - Compliance: patients often do not take their medicine as prescribed
  - Suicide: depressed patients may attempt suicide

Antipsychotic Agents

- Haveles (p. 225) (Table 17-1)
  - Divided into two major groups, depending on their ability to target both the positive and the negative symptoms of schizophrenia
  - Until the last few years, conventional antipsychotics were the group used most often
  - More patients are now being treated with newer “atypical” antipsychotics
    - These agents produce more nausea and fewer anticholinergic and sedative effects compared with conventional antipsychotics
    - Patients who were previously resistant to conventional agents have been managed with these new drugs

- Haveles (p. 225)
  - Clinical judgment and the drug’s side effect profile determine which agent is used
    - In general, lower-potency agents have more sedation, more peripheral side effects, and more autonomic effects
    - Higher-potency agents have more extrapyramidal effects and less sedation

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**Pharmacologic Effects**

- **Conventional antipsychotics**
  - Antipsychotic: associated with slowing of psychomotor activity and calming of emotions with suppression of hallucinations and delusions
  - Antiemetic: a result of depression of the chemoreceptor trigger zone
  - Potentiation of opioids: will potentiate the action of the depressants

- **Atypical antipsychotic agents**
  - Have action at more than one receptor, which results in improved efficacy
  - Fewer side effects than conventional antipsychotics
  - As with conventional antipsychotics, atypical antipsychotics are effective against positive effects associated with psychosis
  - Atypical antipsychotics are also effective against the negative effects

**Adverse Reactions of Antipsychotic Agents**

- **Sedation**: conventional antipsychotics agents differ in the degree of sedation and drowsiness they produce
- **Extrapyramidal effects**: stimulation of extrapyramidal system by conventional antipsychotics can cause:
  - Acute dystonia consisting of muscle spasms of face, tongue, neck, and back
  - Parkinsonism with symptoms of resting tremor, rigidity, and akinesia
  - Akathisia: increased compulsive muscular activity
  - Tardive dyskinesia: involuntary movements involving tongue, lips, face, and jaw

- **Extrapyramidal side effects of conventional antipsychotics can cause severe intermittent pain in the region of the temporomandibular joint (TMJ)**
  - A spasm of the muscles of mastication
  - Force should not be exerted to open the patient’s mouth for dental treatment

- **Orthostatic hypotension**: conventional antipsychotic agents depress central sympathetic outflow and block peripheral adrenergic receptors
- **Other cardiovascular effects**: conventional antipsychotic agents are reported to cause tachycardia
- **Seizures**: conventional antipsychotics lower the convulsion threshold

- **Anticholinergic effects**: conventional antipsychotics produce blurred vision, xerostomia, and constipation
- **Other effects**: conventional antipsychotics can produce blood dyscrasias, cholestatic jaundice, skin eruptions, and photosensitivity
- **Agranulocytosis**: the atypical antipsychotic clozapine (Clozaril) produces potentially life-threatening agranulocytosis
**Drug Interactions**

- Haveles (p. 227)
  - Central nervous system (CNS) depressants: conventional antipsychotics interact in an additive or potentiating fashion with all CNS depressants

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- Epinephrine: can be used in patients taking conventional antipsychotics
  - Should not be used to treat vasomotor collapse because it could cause a further decrease in blood pressure
  - Caused by predominant β-agonist (vasodilating) activity of epinephrine in the presence of conventional antipsychotics (α-blockers)

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**Drug Interactions**

- Haveles (p. 227)
  - Anticholinergic agents: to control excessive extrapyramidal stimulation, conventional antipsychotic therapy often must be combined with anti-Parkinson medication of the anticholinergic type
  - This combination exacerbates antimuscarinic peripheral effects such as xerostomia, urinary retention, constipation, blurred vision, and inhibition of sweating

**Uses of Antipsychotic Agents**

- Haveles (pp. 227-228)
  - Antipsychotic effects: the drug of choice for schizophrenia
  - Injectable conventional antipsychotics are available—fluphenazine (Prolixin), haloperidol (Haldol)
  - Antiemetic effects: conventional antipsychotics prevent or inhibit vomiting—prochlorperazine (Compazine)
  - Other effects: intractable hiccups and drug withdrawals have been successfully treated with conventional antipsychotics

**Dental Implications**

- Haveles (p. 228) (Box 17-2)
  - Sedation: additive with other sedating agents
  - Anticholinergic effects: additive with agents with atropine-like effects
    - Can lead to toxic reactions, including tachycardia, urinary retention, blurred vision, constipation, and xerostomia
  - Orthostatic hypotension: can be minimized by raising the chair slowly

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- Epinephrine should be avoided in the management of acute hypotensive crisis in patients taking antipsychotics
- TMJ pain: muscles of mastication may be in spasm as a result of conventional antipsychotics' extrapyramidal effects
- Tardive dyskinesia
Antipsychotic Agents

- Conventional antipsychotics
  - High potency
    - fluphenazine (Prolixin)
    - haloperidol (Haldol)
  - Medium potency
    - loxapine (Loxitane)
    - molindone (Moban)
    - perphenazine (Trilafon)
    - trifluoperazine (Stelazine)
    - thiothixene (Navane)

- Low potency
  - chlorpromazine (Thorazine)
  - chlorprothixene (Taractan)
  - mesoridazine besylate (Serentil)
  - thioridazine (Mellaril)

- Atypical antipsychotics
  - aripiprazole (Abilify)
  - clozapine (Clozaril)
  - olanzapine (Zyprexa)
  - quetiapine (Seroquel)
  - risperidone (Risperdal)
  - ziprasidone (Geodon)

Antidepressant Agents

- Tricyclic antidepressants
  - Second-generation antidepressants
    - Selective serotonin reuptake inhibitors (SSRIs)
    - Bupropion
    - Other antidepressant agents
    - Monoamine oxidase inhibitors (MAOIs)

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Tricyclic Antidepressants (TCAs)

- First-generation antidepressants
  - Pharmacologic effects: in the depressed patients, a feeling of well-being, elevation of mood, and a dulling of depressive ideation are noted
  - Sedation often occurs, but tolerance to this effect often develops
Adverse Reactions of Tricyclic Antidepressants

- Haveles (pp. 228-230)
- Resemble those of antipsychotic agents
  - CNS: some degree of sedation
  - Autonomic nervous system: anticholinergic effects
  - Cardiac: toxicity, myocardial infarction and congestive heart failure have occurred during treatment
    - Arrhythmias and tachycardia can be caused by the antimuscarinic effects of TCAs
  - Dependence or withdrawal: rarely, TCAs have been found to produce psychic or physical dependence

Uses of Tricyclic Antidepressants

- Haveles (pp. 230-231)
- Can be used alone or in combination with antipsychotics or electroconvulsive therapy in the treatment of depression
  - When sedation is desired, amitriptyline (Elavil) is used
  - When less sedation is needed, nortriptyline (Pamelor, Aventyl) or protriptyline (Vivactil) can be tried

Dental Implications of Tricyclic Antidepressants

- Haveles (p. 231) (Box 17-3)
- Sympathomimetic amines: vasoconstrictors may potentiate vasopressor response to epinephrine
- Xerostomia: the anticholinergic effect of sympathomimetic amines is additive with that of other agents that produce dry mouth

Commonly Used Antidepressants

- Haveles (p. 229) (Table 17-2)
- Tricyclic: tertiary amines
  - amitriptyline (Elavil)
  - clomipramine (Anafranil)
  - desipramine (Norpramin, Pertofrane)
  - doxepin (Adapin, Sinequan)
  - imipramine (Tofranil)
  - nortriptyline (Pamelor, Aventyl)
  - protriptyline (Vivactil)

Drug Interactions of Tricyclic Antidepressants

- Haveles (p. 230)
- TCAs potentiate the behavioral actions of amphetamines and other CNS stimulants
  - Potentiate pressor effect of injected sympathomimetics
  - Interact with MAOIs
- Poisoning: associated with overdose
Commonly Used Antidepressants

- Haveles (p. 229) (Table 17-2)
  - TCAs
    - amoxapine (Asendin)
    - maprotiline (Ludiomil)

Second-Generation Antidepressants

- Haveles (p. 231)
  - Overview: newer antidepressants with fewer side effects than TCAs
    - Fewer anticholinergic effects and less cardiotoxicity, some have less sedation effect

Second-Generation Antidepressants

- Haveles (p. 231)
  - Trazodone: a serotonin modulator antidepressant chemically unrelated to TCAs
    - Highly sedative and has been associated with priapism requiring surgical intervention

Selective Serotonin Reuptake Inhibitors

- Haveles (p. 231)
  - Specifically inhibit the reuptake of 5-HT, their adverse reaction profile differs from that of TCAs
    - CNS: tend to produce stimulation rather than depression
    - Gastrointestinal (GI): nausea and diarrhea in 15% to 30% of patients
    - Oral: xerostomia, taste changes, aphthous stomatitis, glossitis
    - Other: excessive sweating, palpitations

Selective Serotonin Reuptake Inhibitors

- Haveles (p. 229) (Table 17-2)
  - Serotonin modulators
    - nefazodone (Serzone)
    - trazodone (Desyrel)
bupropion
(Wellbutrin)

- Haveles (pp. 231-232)
- A small percentage (0.4%) of patients have experienced seizures
  - Reserved for patients who are not responsive to other agents
- GI effects occur in about 20% of patients
  - Neurologic effects, dry mouth, headache, excessive sweating, and tremors have been reported
  - Agitation and dizziness occur often

Commonly Used Antidepressants

- Haveles (p. 229) (Table 17-2)
- Dopamine-norepinephrine reuptake inhibitors
  - bupropion (Wellbutrin, Zyban)
  - bupropion, sustained release (Wellbutrin SR)
  - bupropion, extended release (Wellbutrin ER)
- Bupropion: http://www.wellbutrin-xl.com/

Other Antidepressant Agents

- Haveles (p. 232)
- Newer antidepressant agents
  - nefazodone (Serzone)
    - A 5-HT modulator, potential to cause life-threatening hepatic failure
  - venlafaxine (Effexor)
    - A 5-HT-NE reuptake inhibitor, a weak inhibitor of cytochrome P-450 2D6 isoenzymes
  - mirtazapine (Remeron)
    - A NE-5-HT modulator, causes somnolence, weight gain, constipation, and dry mouth

Monoamine Oxidase Inhibitors

- Haveles (p. 232)
- A large variety of drugs that have the ability to inhibit monoamine oxidase
  - Many adverse effects, and an overdose can lead to a severe toxic reaction
  - The action of any exogenous sympathomimetic amine is potentiated
  - Interact with many drugs, such as amphetamines, and with foods such as cheeses, wines, and fish, precipitation of a hypertensive crisis and even death

Drugs for Treatment of Bipolar Depression

- Haveles (p. 232)
- Lithium was the major drug used in treatment of bipolar depression
  - Other agents commonly used today include anticonvulsants, including carbamazepine, valproate, and gabapentin

lithium
(Eskalith, Lithobid)

- Haveles (p. 232) (Box 17-4)
- Used for bipolar (manic) depression
  - Side effects include polyuria, fine hand tremor, thirst
  - In more severe cases, slurred speech, ataxia, nausea, vomiting, and diarrhea
  - CNS symptoms include muscle rigidity, hypertensive deep reflexes, excessive tremor, and muscle fasciculations
  - Changes in sodium levels can affect lithium levels
Anticonvulsants

- Haveles (p. 232)
- The manic phase of bipolar depression may be treated with anticonvulsants such as carbamazepine, valproate, and gabapentin